Liquid Study 1

for string quartet and electronic sound

dedicated to Roger Reynolds

◆

2015

Benjamin Hackbarth

CELLO

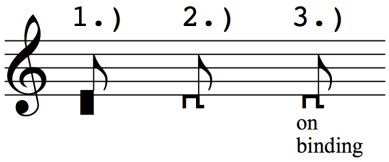
TIMBRE TECHNIQUES

SP – *sul ponticello*
MSP – *molto sul ponticello*
CL Bat – *col legno battuto*

ST – *sul tasto*
MST – *molto sul tasto*

Each of these techniques applies only to the event over which they are written, unless extended by a horizontal bracket or additional text specifies how long they last.

REGULAR STAFF NOTEHEADS

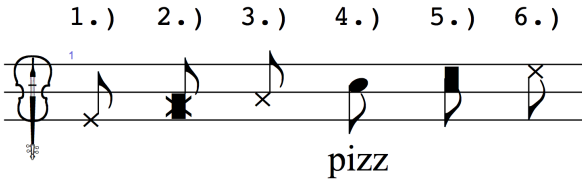


1.) Mute strings with left hand resulting in an unpitched sound. Multiple fingers on the left hand should be in contact with each string at a different location, ensuring that the strings are deadened and will not produce pitches. Harmonic pressure should be used to avoid generating a fundamental pitch. Register indicates L.H. position - higher notes correspond to higher positions on the fingerboard.

2.) Scratch tone – high pressure and a slow bow speed. Use left-hand muting to avoid open string resonances.

3.) Scratch tone behind the bridge and on the string binding. Use left-hand muting to avoid open string resonances.

PERCUSSIVE STAFF NOTEHEADS



1.) A strike of the upper bout of the instrument using the flesh of the fingers. When indicated use the knuckles.

2.) Slap the strings against fingerboard with the R.H., muting with the L.H. to prevent open string resonances.

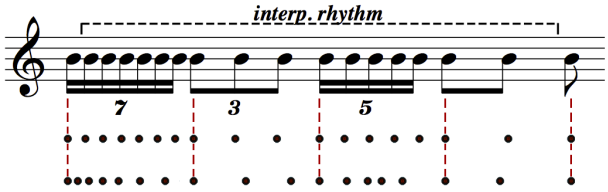
3.) Strike on the c-bout of the instrument using a single finger.

4.) A pizzicato on the bridge of the instrument. The resulting effect will be soft and all dynamic indications are written in quotes to prescribe effort. “pizz” will always accompany this technique.

5.) A strike on the chinrest of the instrument with single flat finger. For cello, the tailpiece should be used instead.

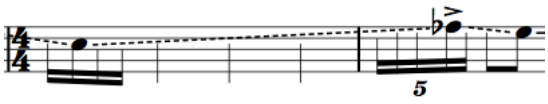
6.) A resonant percussive tap on the body. By default using the flesh of the fingers or, if indicated, use the knuckles. The addition of a staccato marking indicates to keep the fingers in contact with the instrument to slightly dampen the resonance.

INTERPOLATE RHYTHM



This indication modifies the performance of written rhythms in a given passage such that the changing speed of attacks is "blurred". To the left is shown an example. Underneath the symbolic notation are two rows of dots corresponding to individual note attacks. The first line of dots shows the normal performed rhythm. The second row of dots shows the desired result of the "interpolate rhythm" instruction. Such modifications essentially ensure that, rather than abrupt changes in speed, the rate of successive notes is continually modified to achieve a fluid, continuous rhythm.

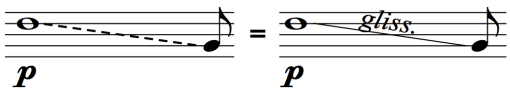
GLISSANDI



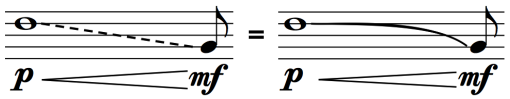
Long glissandi are always notated such that stems are shown to indicate the location of each beat in each bar. These stems ***do not*** indicate bow changes or accent patterns, but are present only to elucidate rhythm.

Furthermore, glissandi notated with a dotted line indicate that the rate of pitch change is coupled to the changing amplitude of the note. Thus, louder dynamics result in a faster glissando speed while softer dynamics indicate a slower glissando. As dynamics change, the speed of glissando should change in tandem. Consider the following examples that illustrate this coupling:

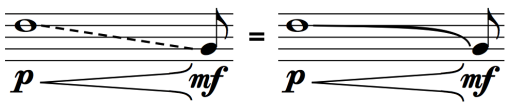
1. A static amplitude yields an even glissando, equivalent to an ordinary glissando.



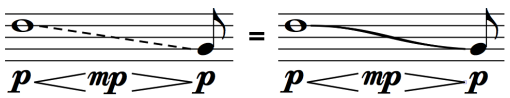
2. However, a change in dynamic affects the slope of the glissando. In this case, the dynamic increase from p to mf creates a steeper pitch change towards the end of the note.



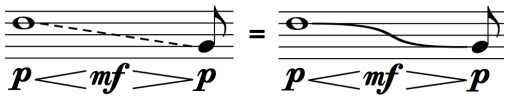
3. The slope of the change in dynamic affects the slope of the glissando. Here, the exponential hairpin creates a more sudden pitch change when compared to 2.



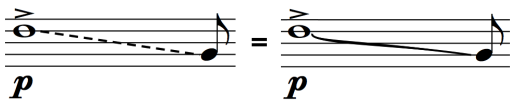
4. The intensity of dynamic change also affects the intensity of the glissando speed. A change from p – mp only creates a slight change in glissando slope...



5. …while a change from p to mf yields a more dramatic slope in pitch change when compared to **4**.



6. Any change in amplitude, however notated, affects glissando speed. Shown here, an accent.



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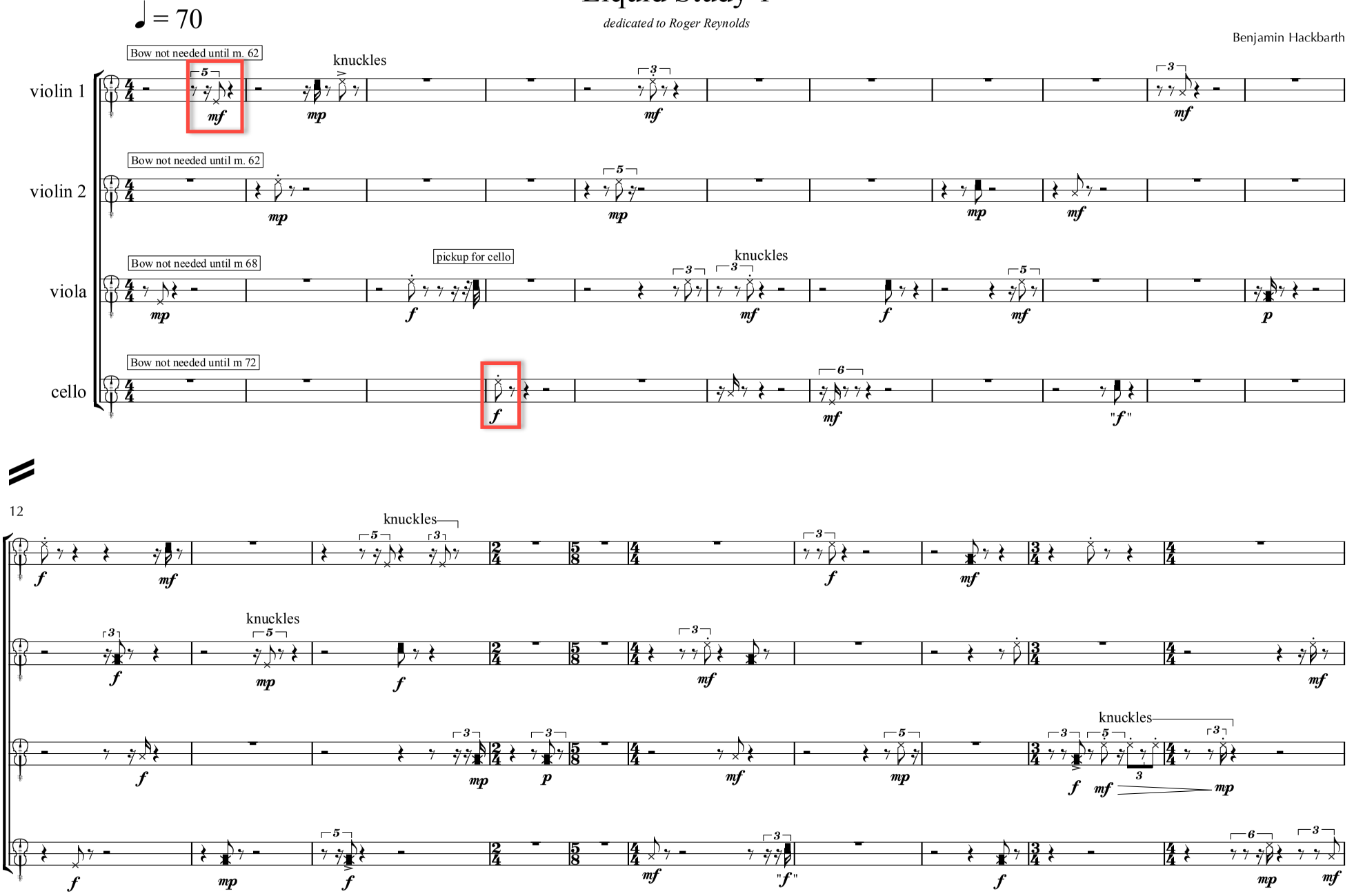
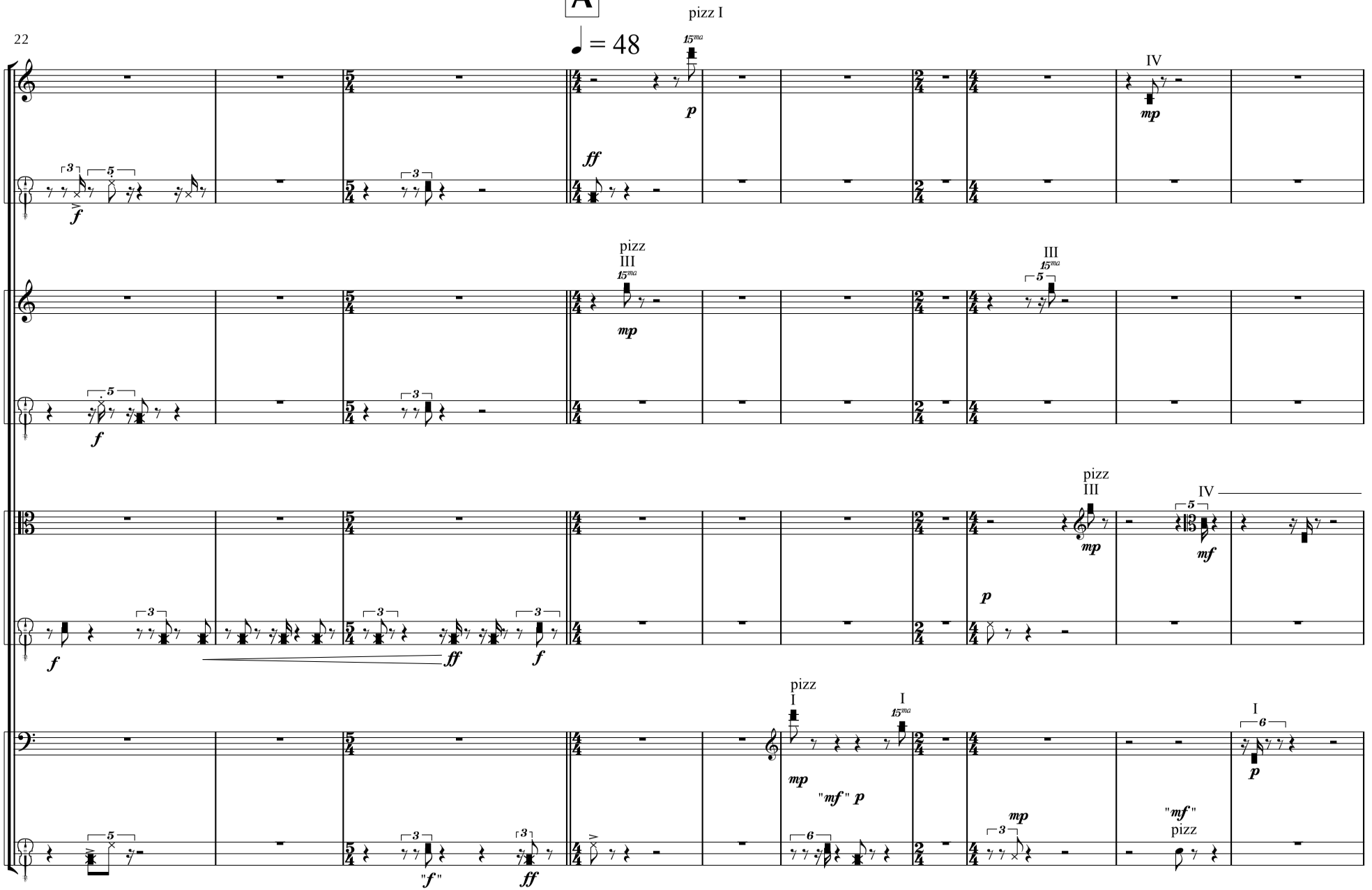
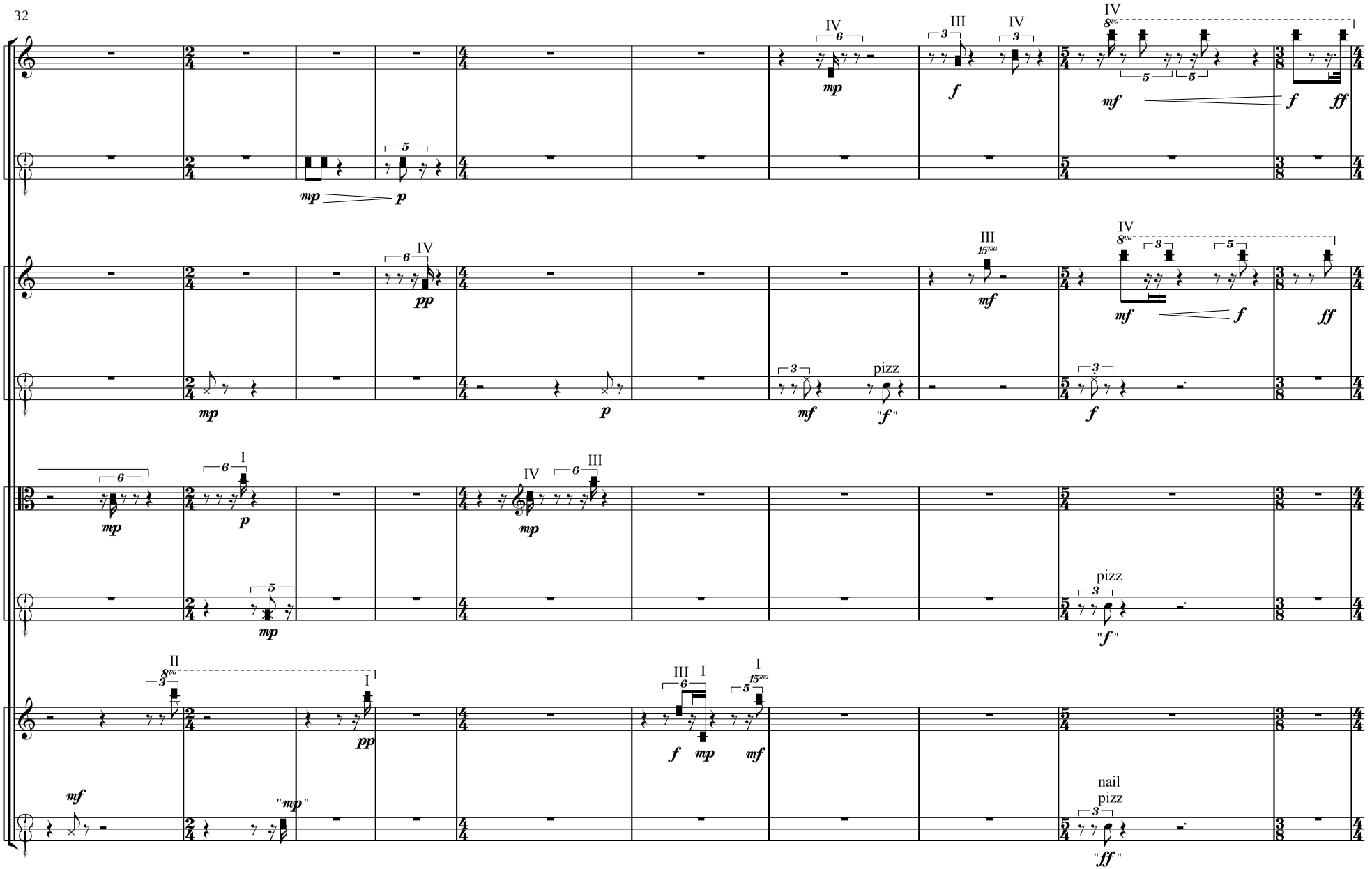
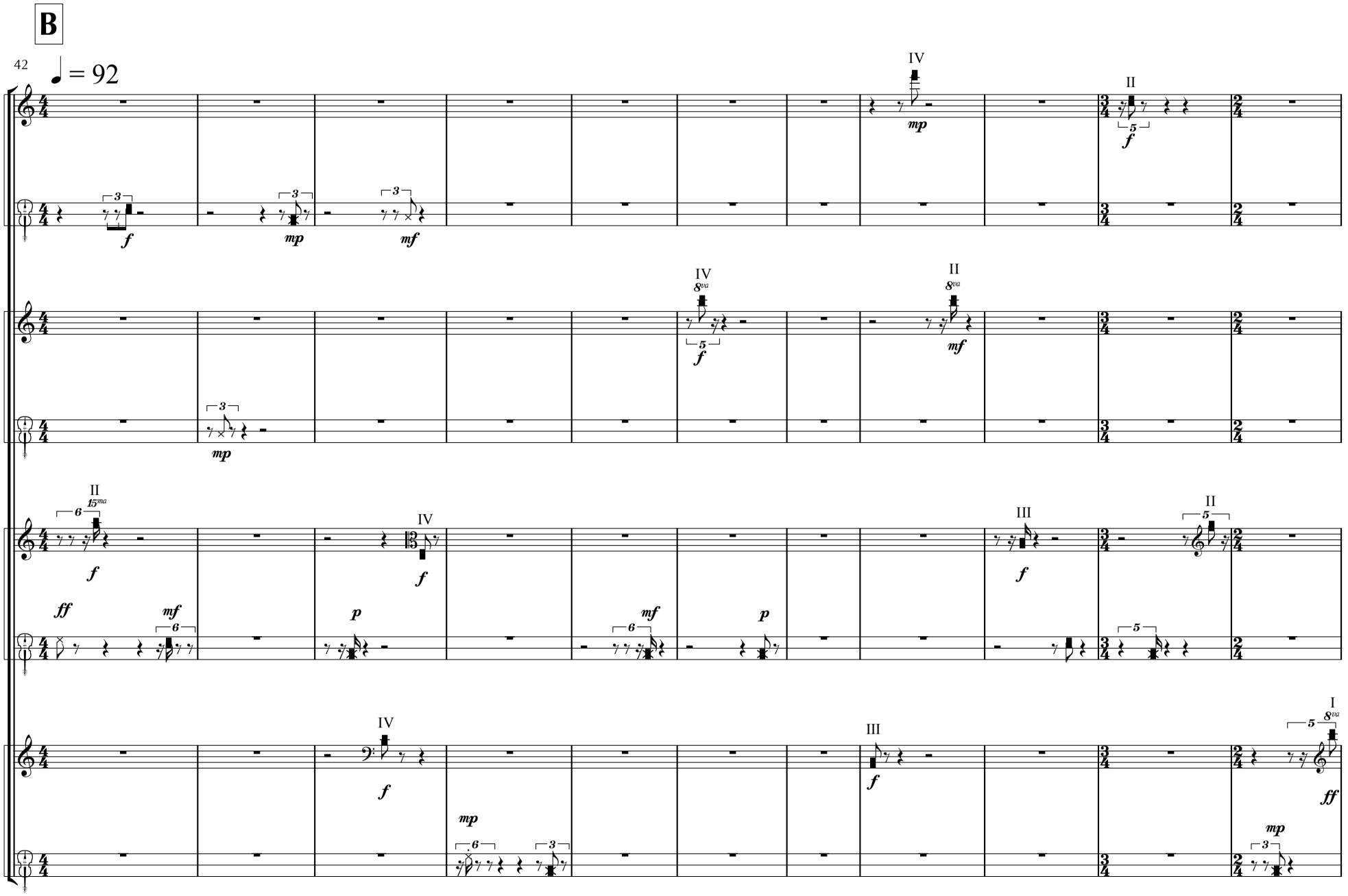


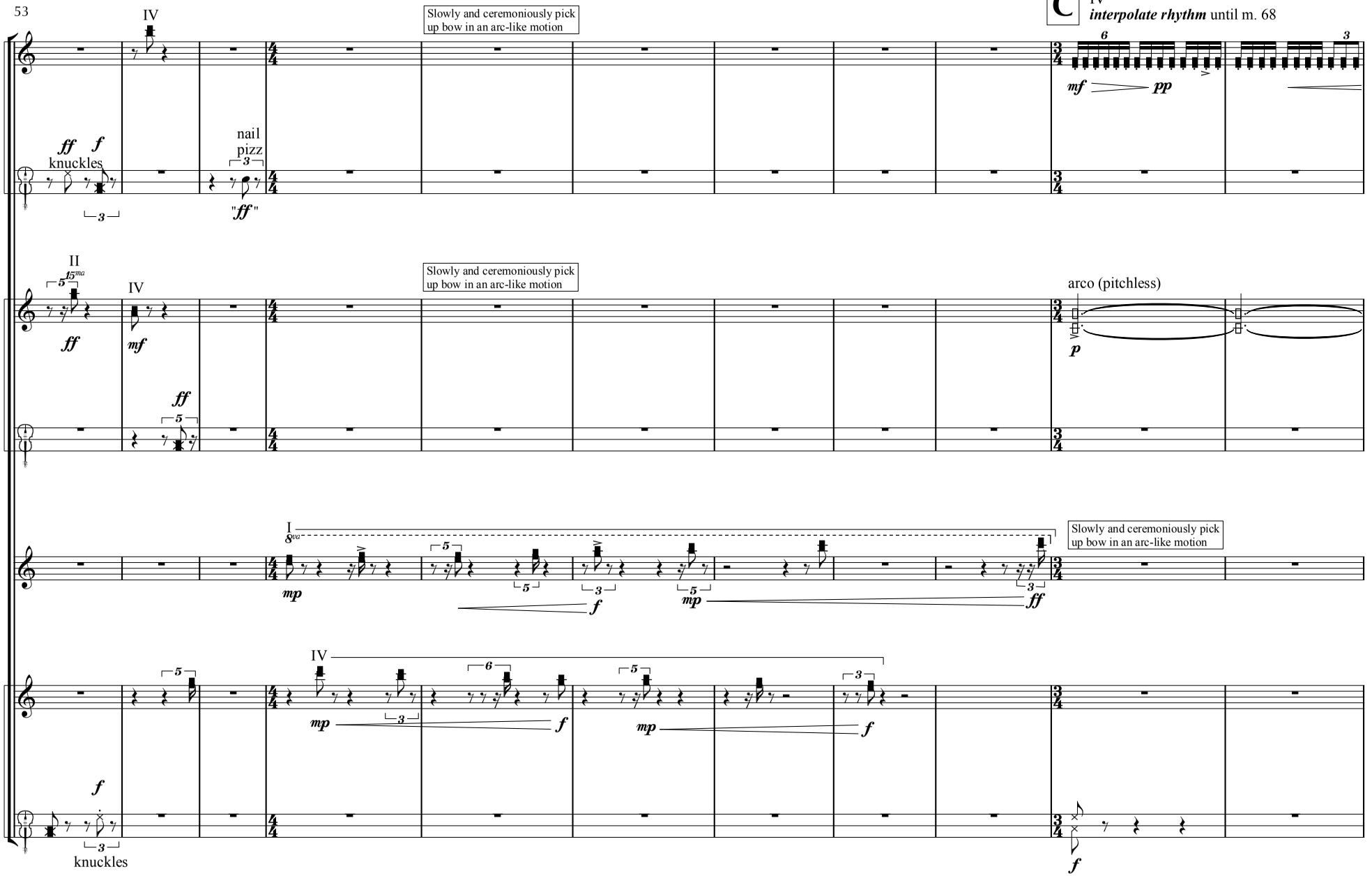
A

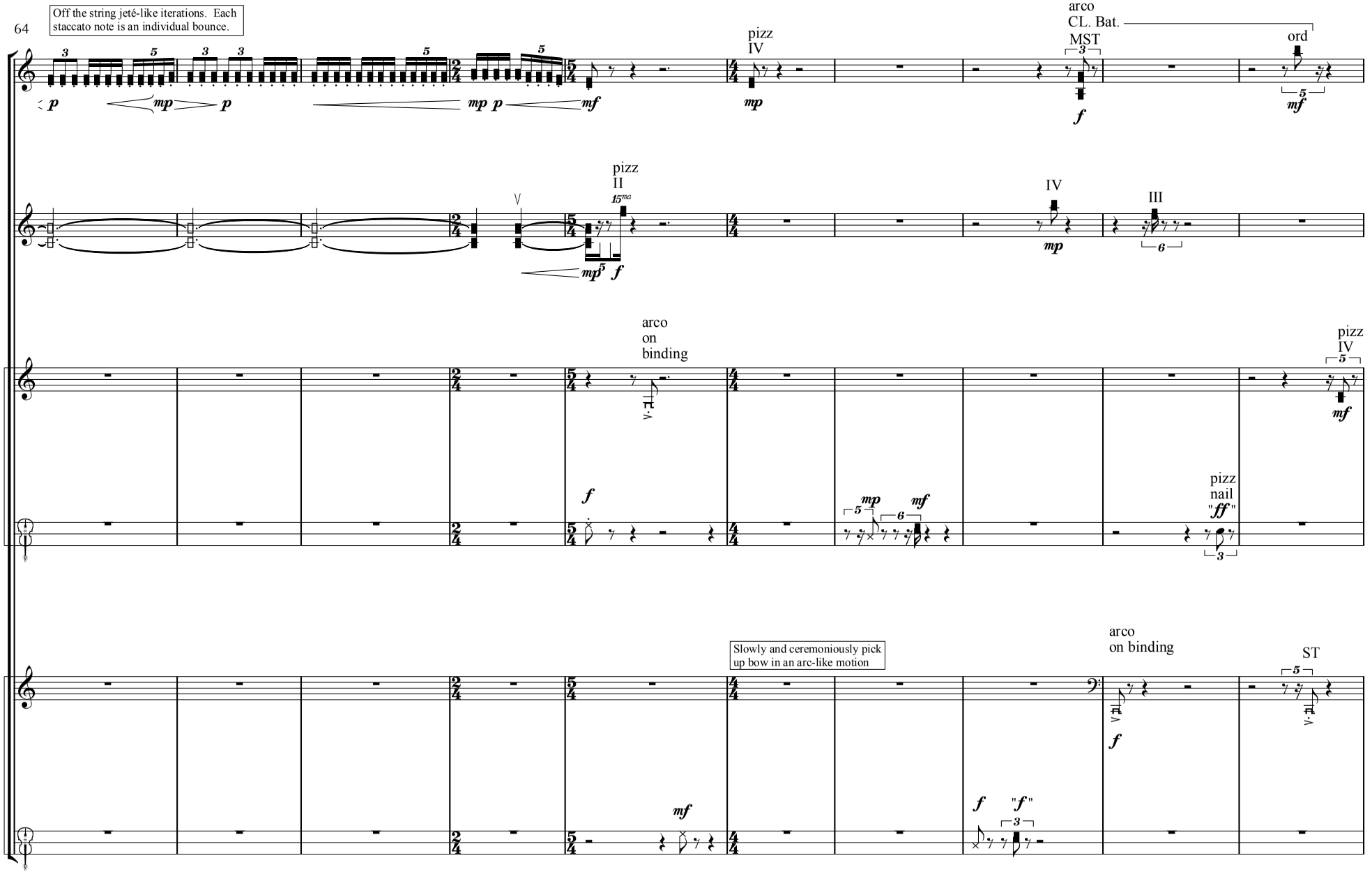
♩ = 48

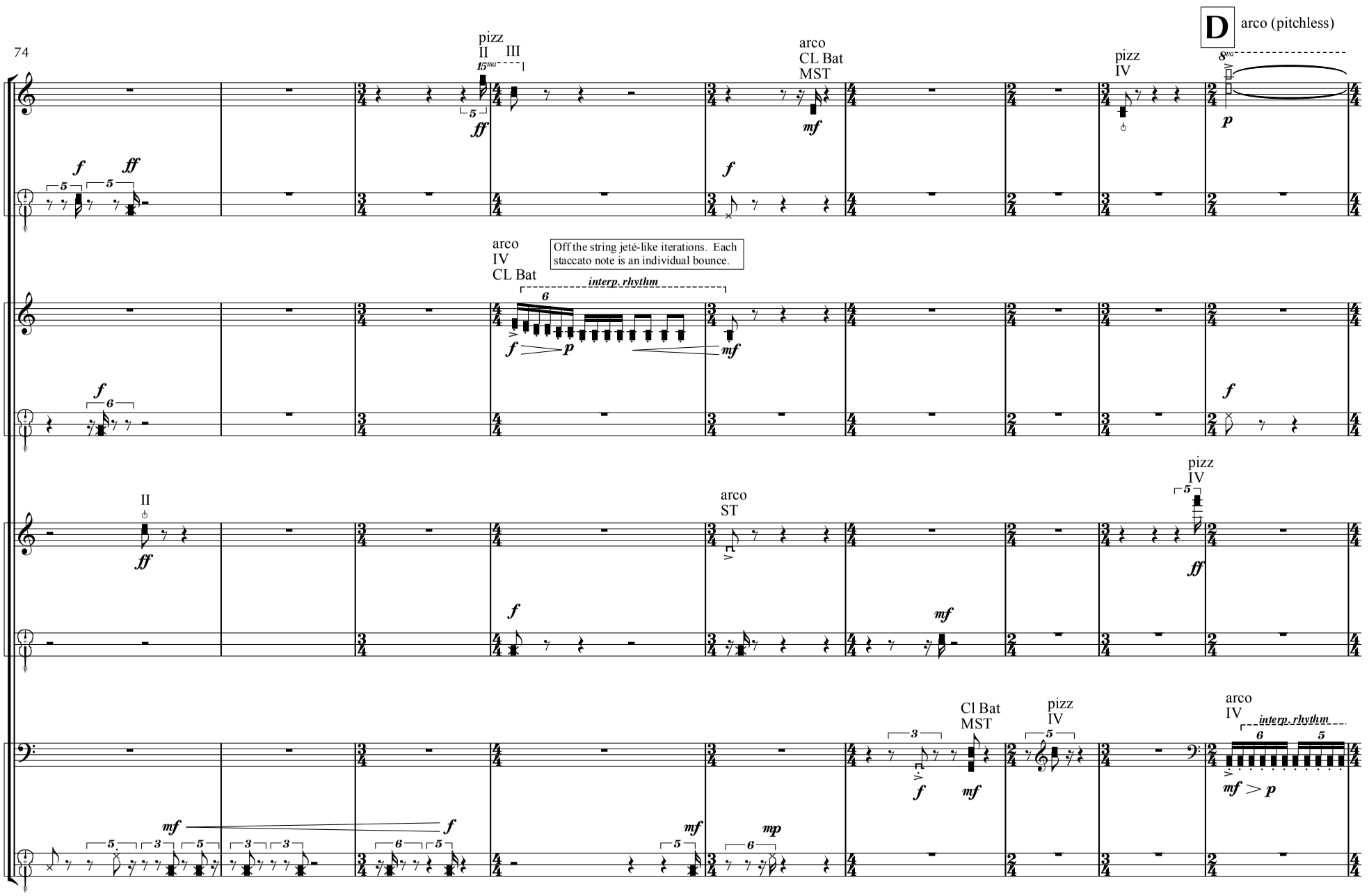

pizz I
15ma
p
IV
mp
ff
pizz
III
15ma
mp
III
15ma
5
f
pizz
III
mp
IV
5
mf
p
f
ff
f
pizz
I
I
15ma
mp
"mf" p
6
mp
3
"mf"
pizz
I
6
p
"f"
ff

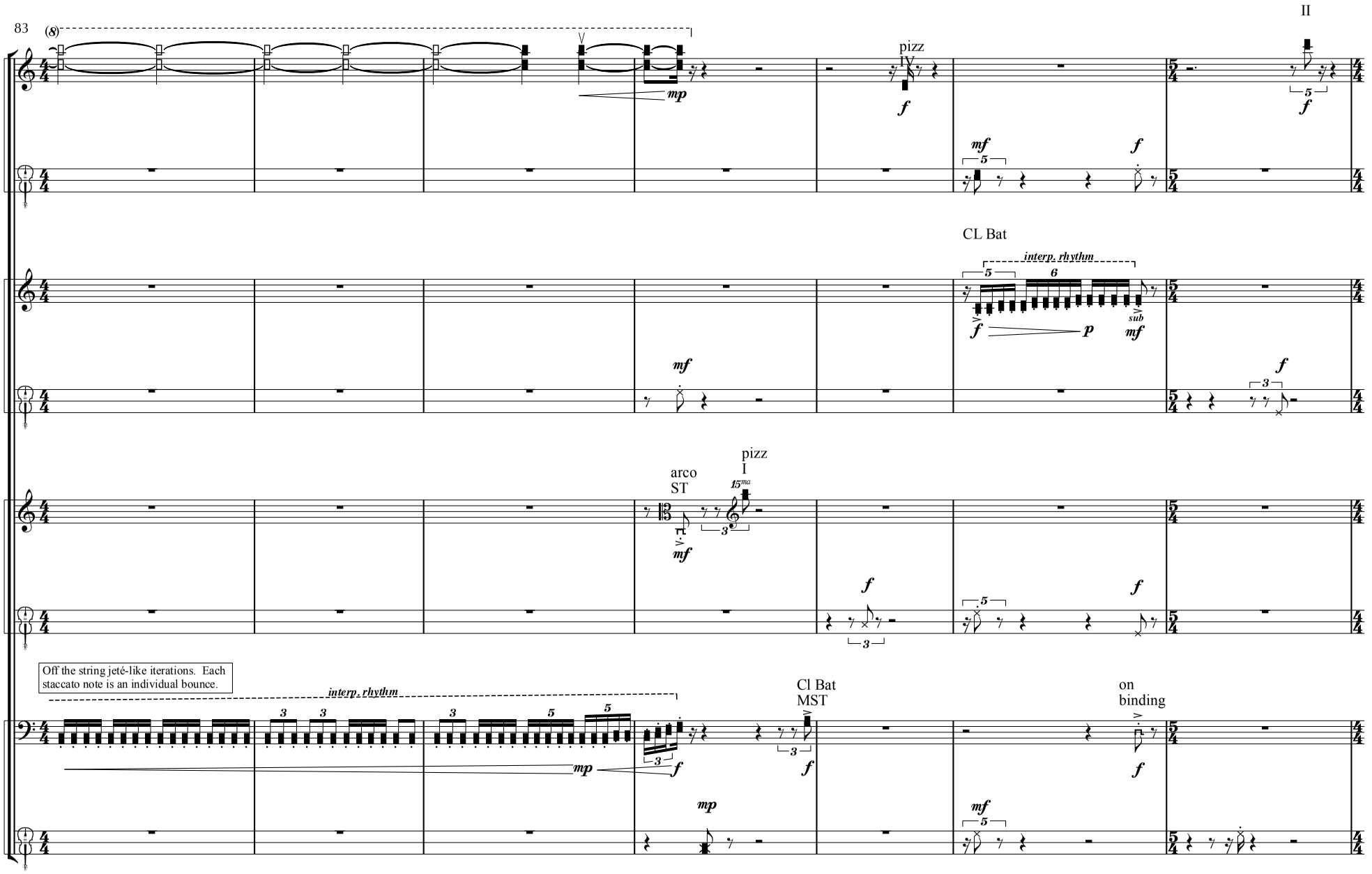

IV
III
IV
IV
8va
mp
f
mf
f
ff
mp
p
IV
pp
III
15ma
IV
8va
mf
mf
f
ff
mp
p
mf
pizz
"f"
f
I
IV
III
mp
p
mp
mp
pizz
"f"
II
8va
I
III
I
I
15ma
pp
f
mp
mf
mf
"mp"
nail
pizz
"ff"

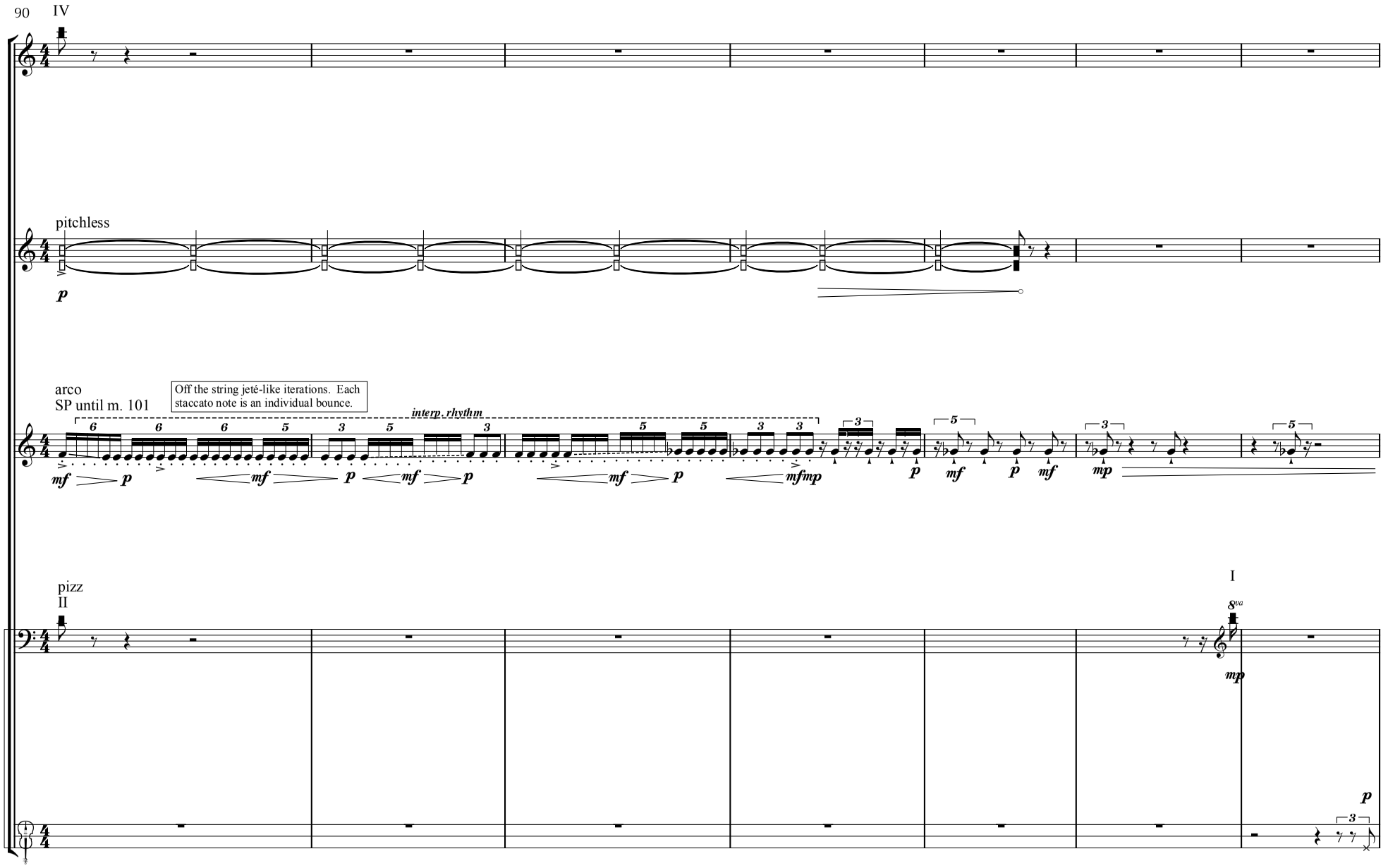

B
42
♩ = 92

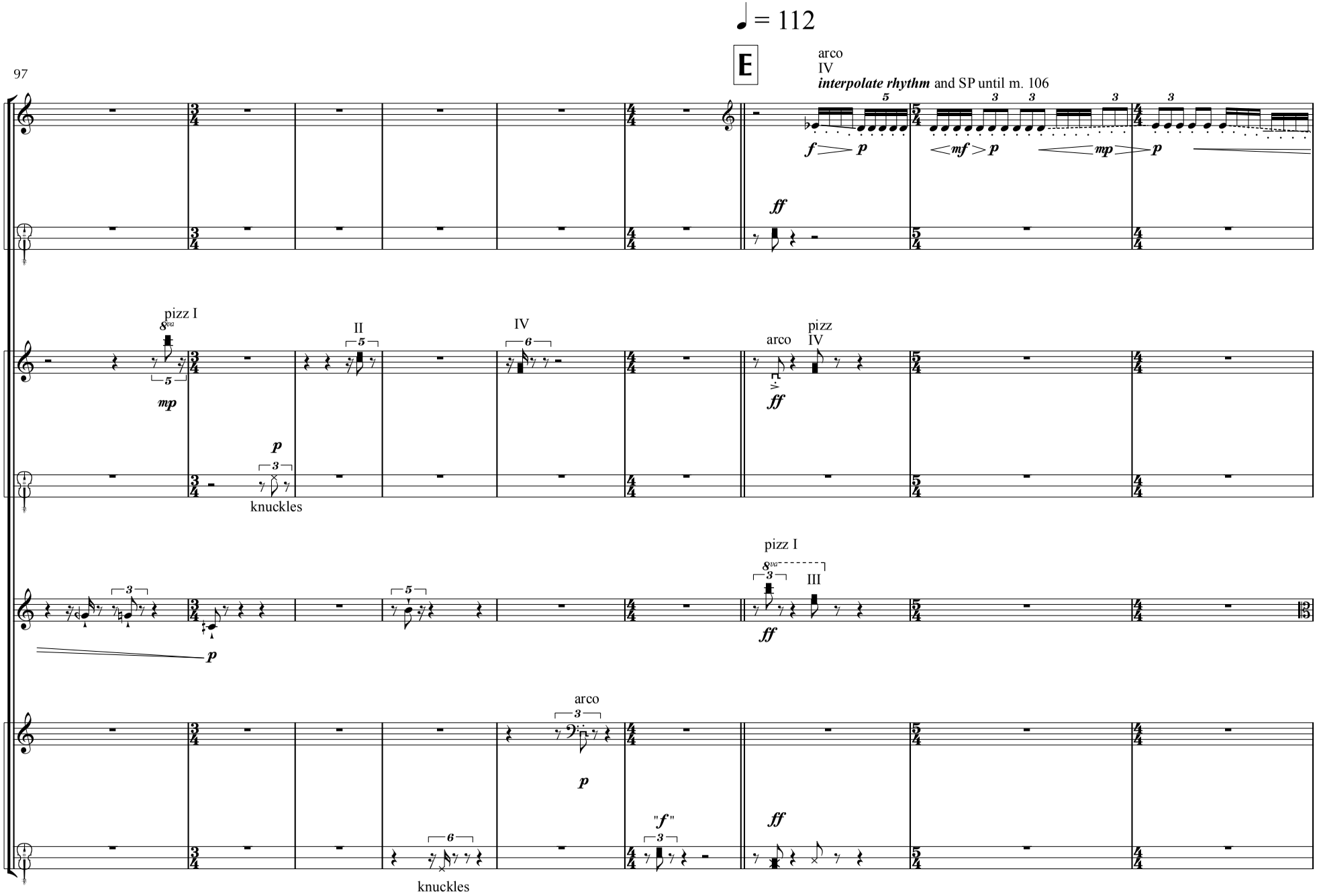

53
IV
Slowly and ceremoniously pick up bow in an arc-like motion
C
arco
IV
interpolate rhythm until m. 68
ff f
knuckles
nail
pizz
"ff"
mf
pp
II
15ma
IV
ff
mf
ff
Slowly and ceremoniously pick up bow in an arc-like motion
arco (pitchless)
p
I
8va
mp
f
mp
ff
Slowly and ceremoniously pick up bow in an arc-like motion
IV
mp
f
mp
f
f
knuckles
f

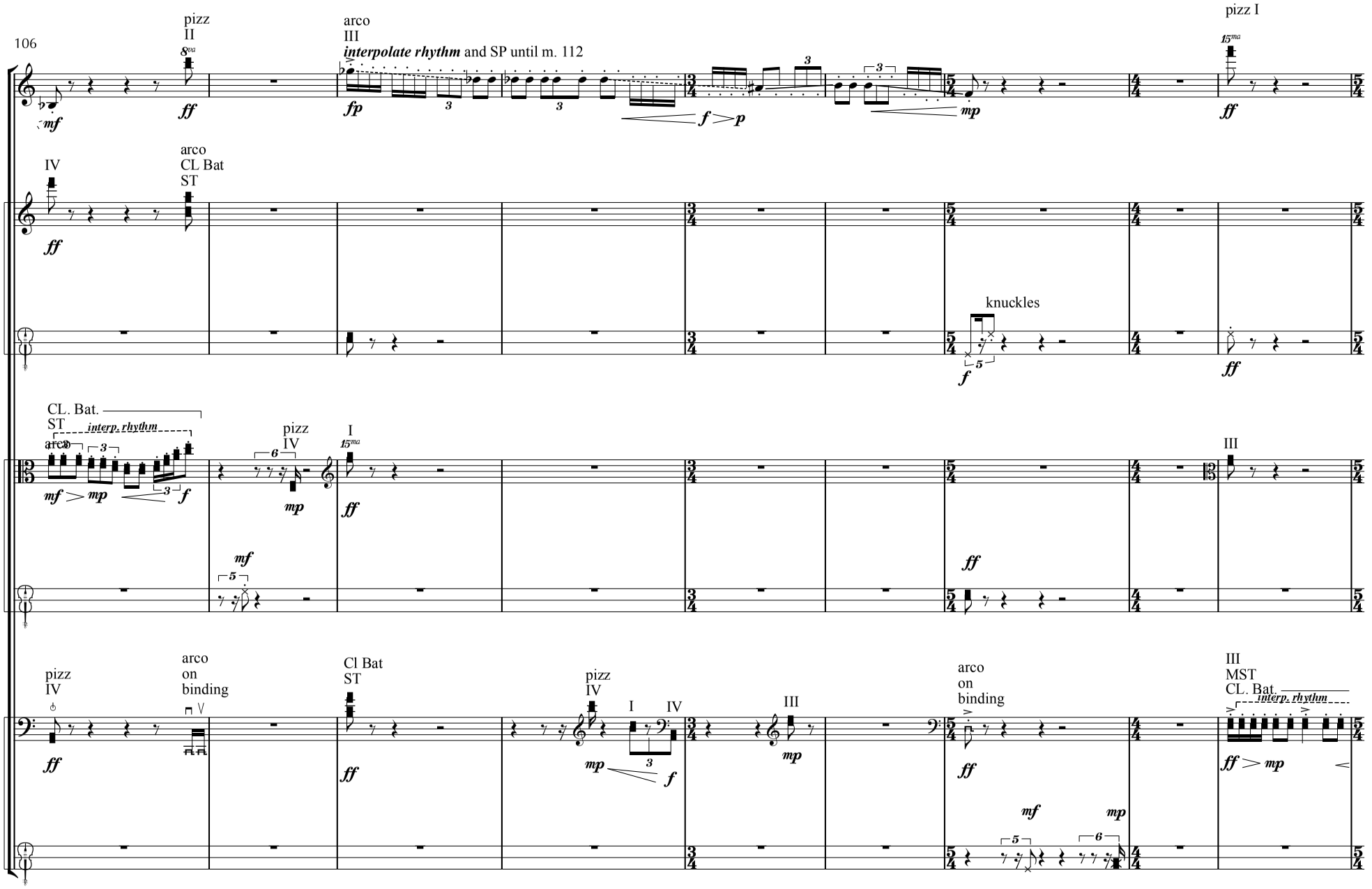

64
Off the string jeté-like iterations. Each staccato note is an individual bounce.
pizz
IV
arco
CL. Bat.
MST
ord
pizz
II
15ma
IV
III
arco
on
binding
pizz
IV
pizz
nail
"ff"
Slowly and ceremoniously pick up bow in an arc-like motion
arco
on binding
ST

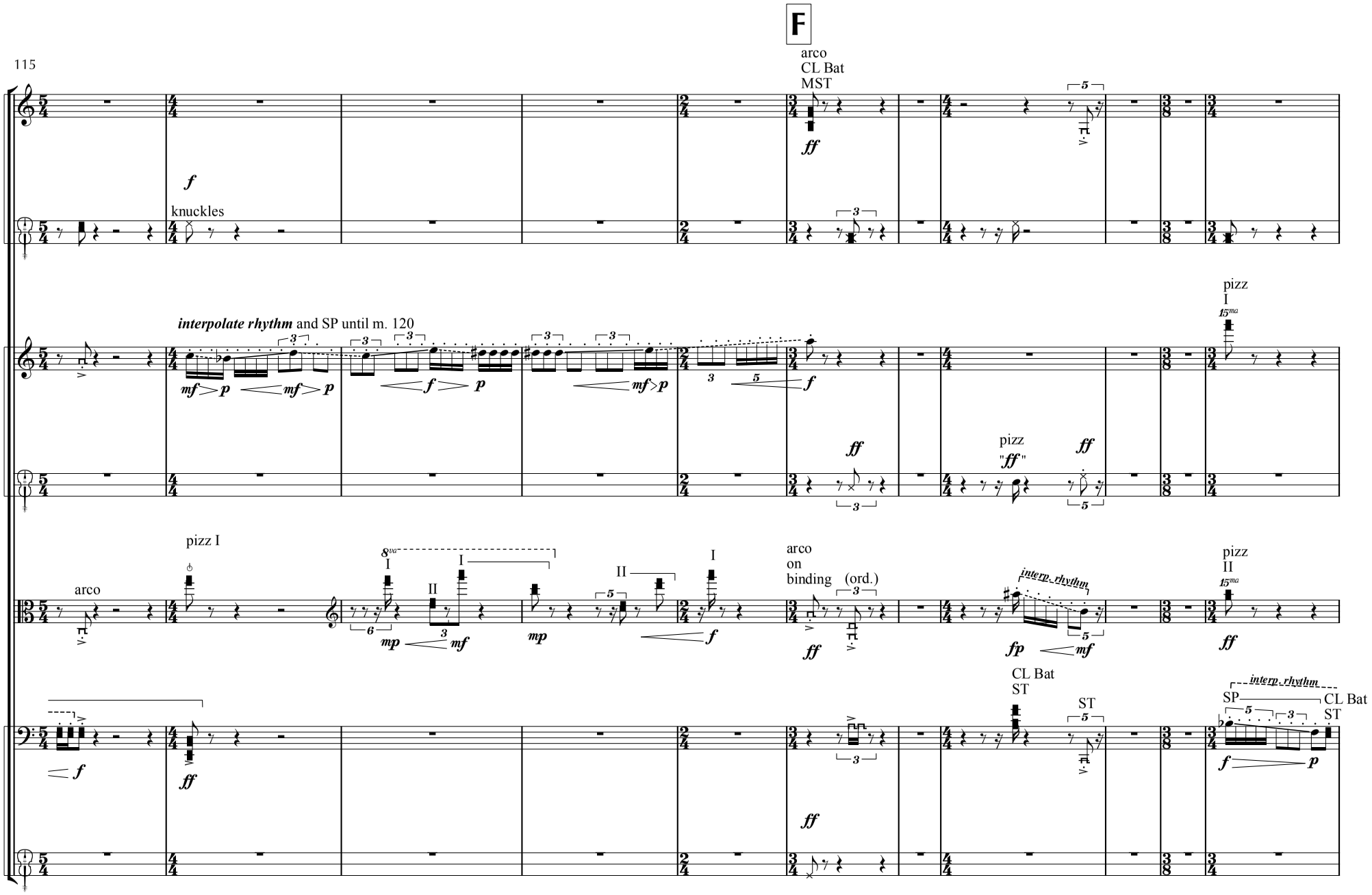

74
pizz
II III
arco
CL Bat
MST
pizz
IV
D
arco (pitchless)
arco
IV
CL Bat
Off the string jeté-like iterations. Each staccato note is an individual bounce.
interp. rhythm
II
arco
ST
pizz
IV
Cl Bat
MST
pizz
IV
arco
IV
interp. rhythm

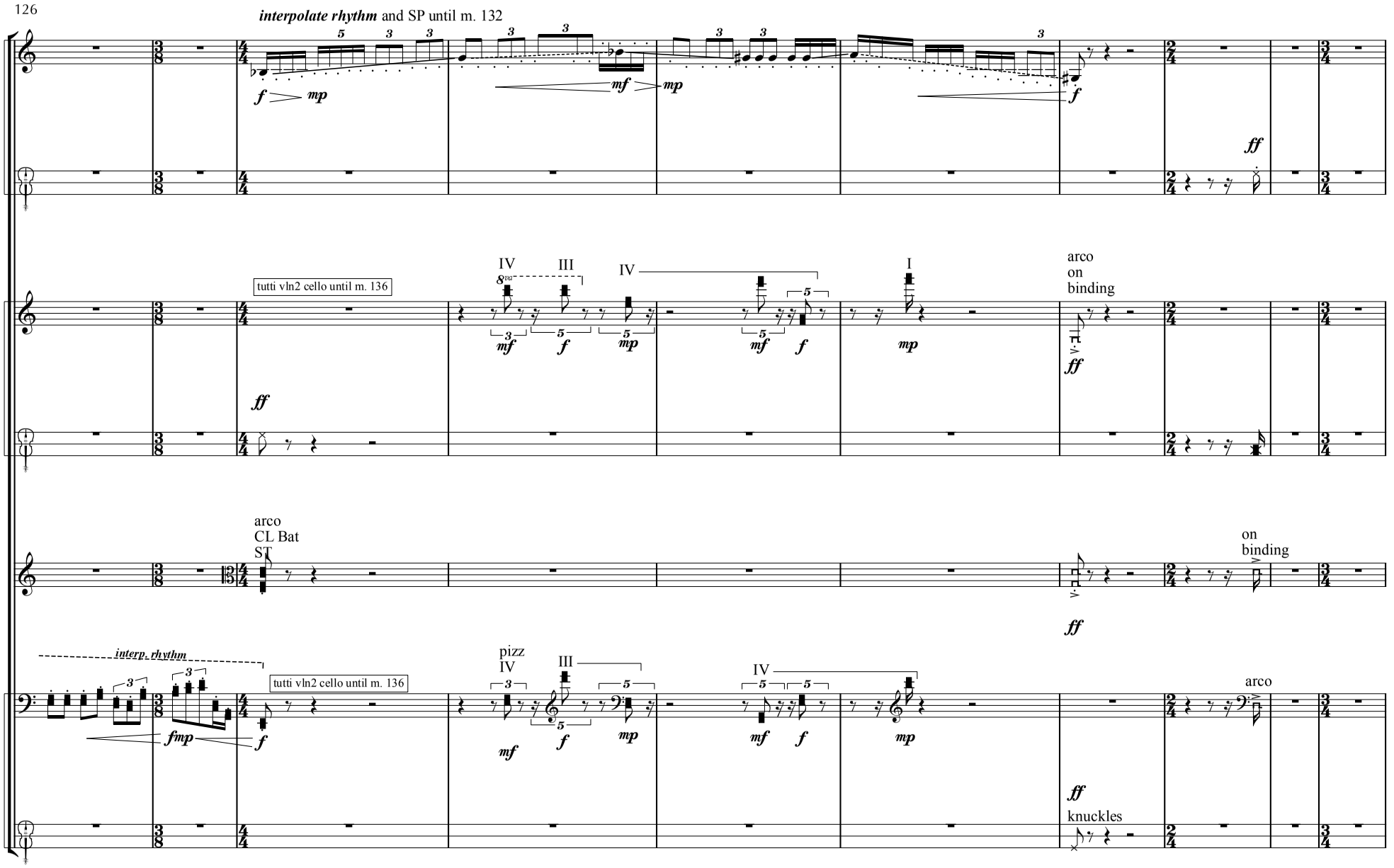

83
(8)
II
pizz
IV
CL Bat
interp. rhythm
arco
ST
pizz
I
15ma
Off the string jeté-like iterations. Each staccato note is an individual bounce.
interp. rhythm
Cl Bat
MST
on
binding

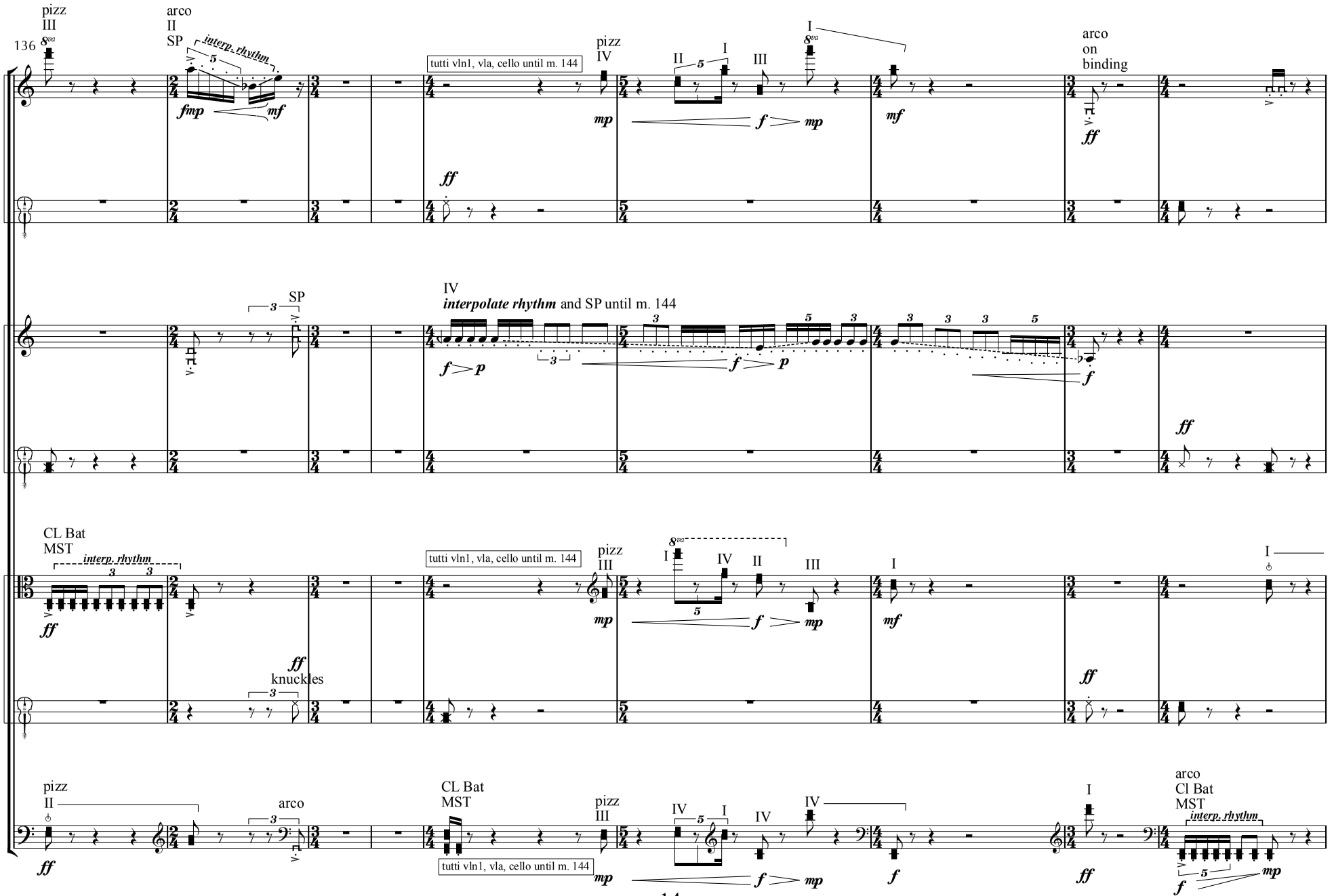

90
IV
pitchless
p
arco
SP until m. 101
Off the string jeté-like iterations. Each staccato note is an individual bounce.
interp. rhythm
mf p mf p mf p mf p mf mp p mf p mf mp
pizz
II
I
8va
mp
p

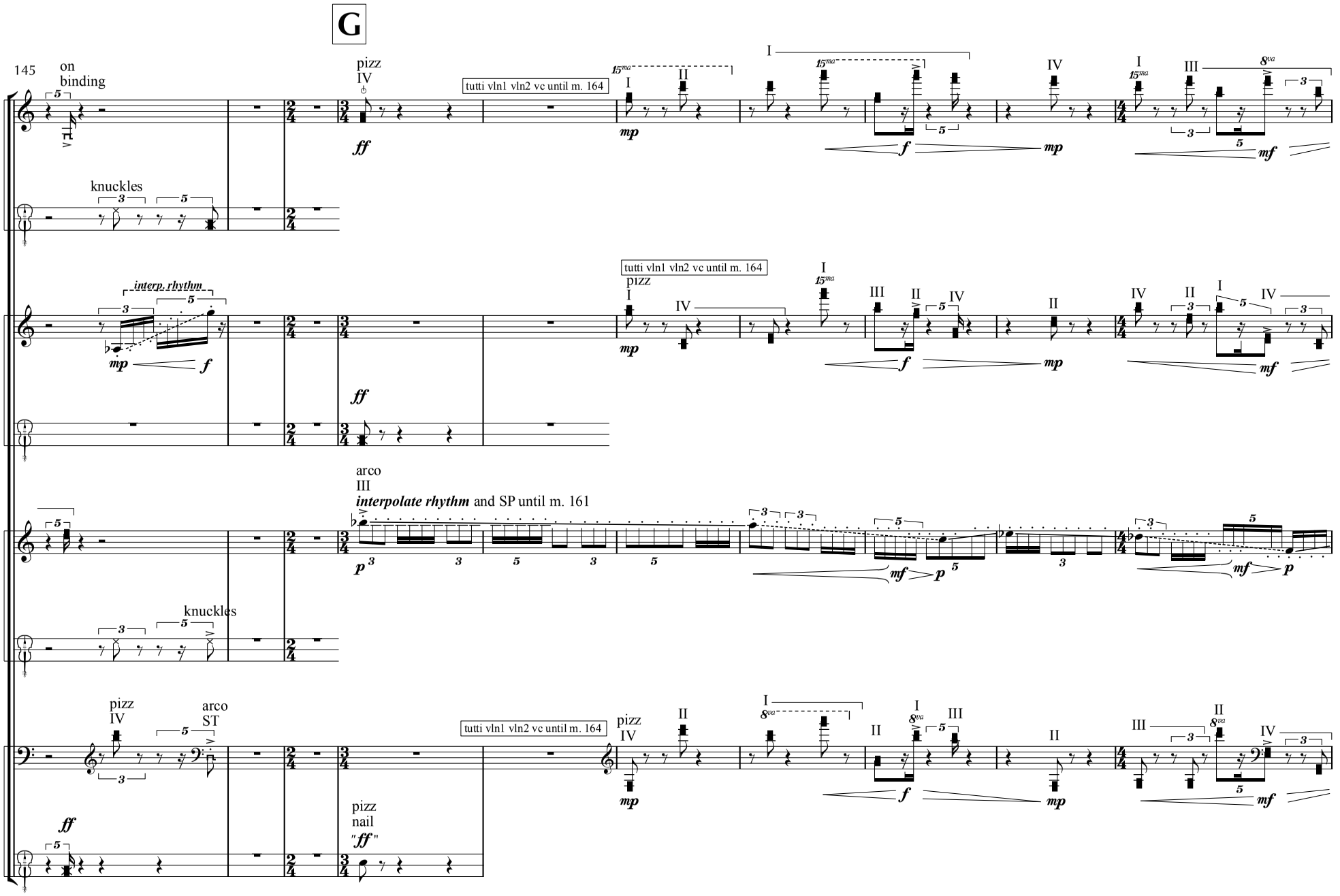

♩ = 112
E
97
arco
IV
interpolate rhythm and SP until m. 106
pizz I
II
IV
arco
pizz
IV
knuckles
pizz I
III
arco
knuckles

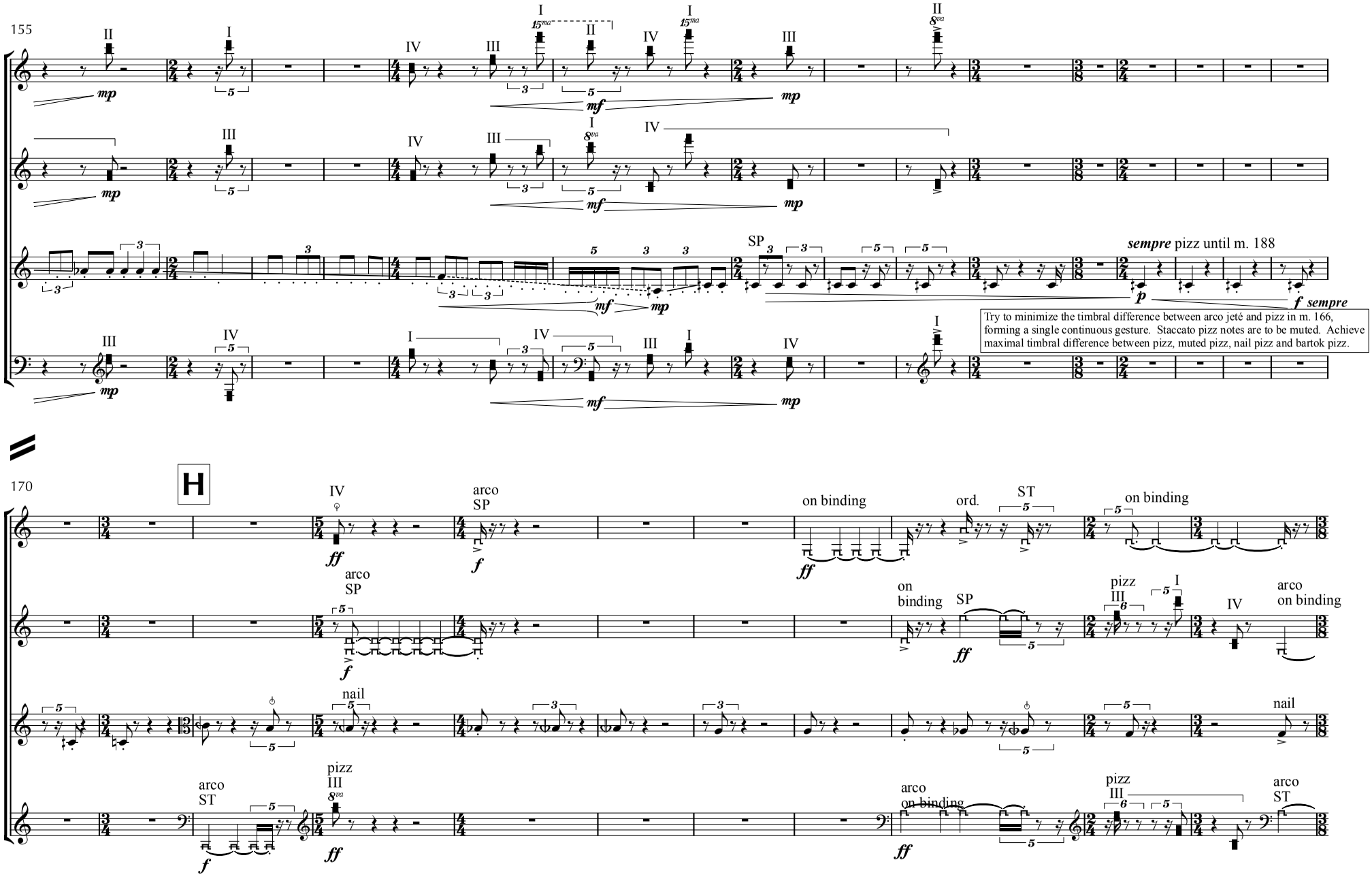

106
pizz
II
arco
III
interpolate rhythm and SP until m. 112
pizz I
IV
arco
CL Bat
ST
knuckles
CL. Bat.
ST
interp. rhythm
arco
pizz
IV
I
III
pizz
IV
arco
on
binding
Cl Bat
ST
pizz
IV
I
IV
III
arco
on
binding
III
MST
CL. Bat.
interp. rhythm

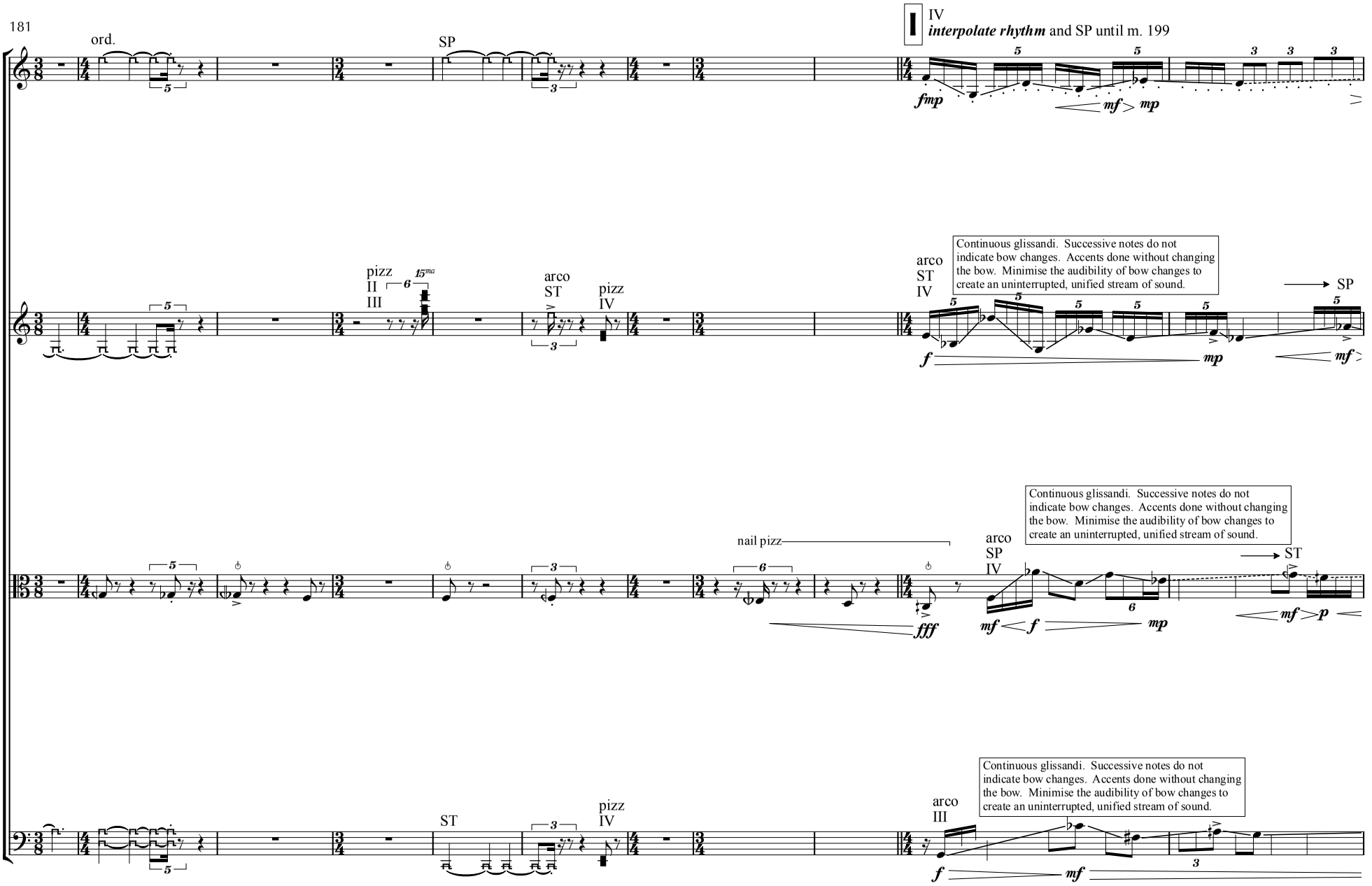

F
115
arco
CL Bat
MST
knuckles
interpolate rhythm and SP until m. 120
pizz
I
pizz
"ff"
pizz I
arco
arco
on
binding
(ord.)
interp. rhythm
pizz
II
CL Bat
ST
ST
interp. rhythm
SP
CL Bat
ST


126
interpolate rhythm and SP until m. 132
tutti vln2 cello until m. 136
arco
CL Bat
ST
interp. rhythm
tutti vln2 cello until m. 136
pizz
arco
on
binding
knuckles


136
pizz
III
arco
II
SP
interp. rhythm
fmp
mf
tutti vln1, vla, cello until m. 144
pizz
IV
mp
f
mp
mf
I
arco
on
binding
ff
SP
IV
interpolate rhythm and SP until m. 144
f
p
CL Bat
MST
interp. rhythm
ff
knuckles
pizz
III
arco
Cl Bat
MST
interp. rhythm
mp


G
145
on
binding
pizz
IV
tutti vln1 vln2 vc until m. 164
knuckles
interp. rhythm
arco
III
interpolate rhythm and SP until m. 161
pizz
arco
ST
pizz
nail
"ff"


155
sempre pizz until m. 188
Try to minimize the timbral difference between arco jeté and pizz in m. 166, forming a single continuous gesture. Staccato pizz notes are to be muted. Achieve maximal timbral difference between pizz, muted pizz, nail pizz and bartok pizz.
170
H
arco SP
on binding
ord.
ST
pizz III
arco on binding
nail
arco ST


181
ord.
SP
IV
interpolate rhythm and SP until m. 199
fmp
mf mp
pizz
II
III
15ma
arco
ST
IV
pizz
IV
Continuous glissandi. Successive notes do not indicate bow changes. Accents done without changing the bow. Minimise the audibility of bow changes to create an uninterrupted, unified stream of sound.
SP
f
mp
mf
nail pizz
fff
arco
SP
IV
Continuous glissandi. Successive notes do not indicate bow changes. Accents done without changing the bow. Minimise the audibility of bow changes to create an uninterrupted, unified stream of sound.
ST
mf f
mp
mf p
ST
pizz
IV
arco
III
Continuous glissandi. Successive notes do not indicate bow changes. Accents done without changing the bow. Minimise the audibility of bow changes to create an uninterrupted, unified stream of sound.
f
mf

192

ST

SP

ST

II

SP

ST

202

pizz

II

arco

IV

Continuous glissandi. Successive notes do not indicate bow changes. Accents done without changing the bow. Minimise the audibility of bow changes to create an uninterrupted, unified stream of sound.

ST

IV

SP

SP

ST

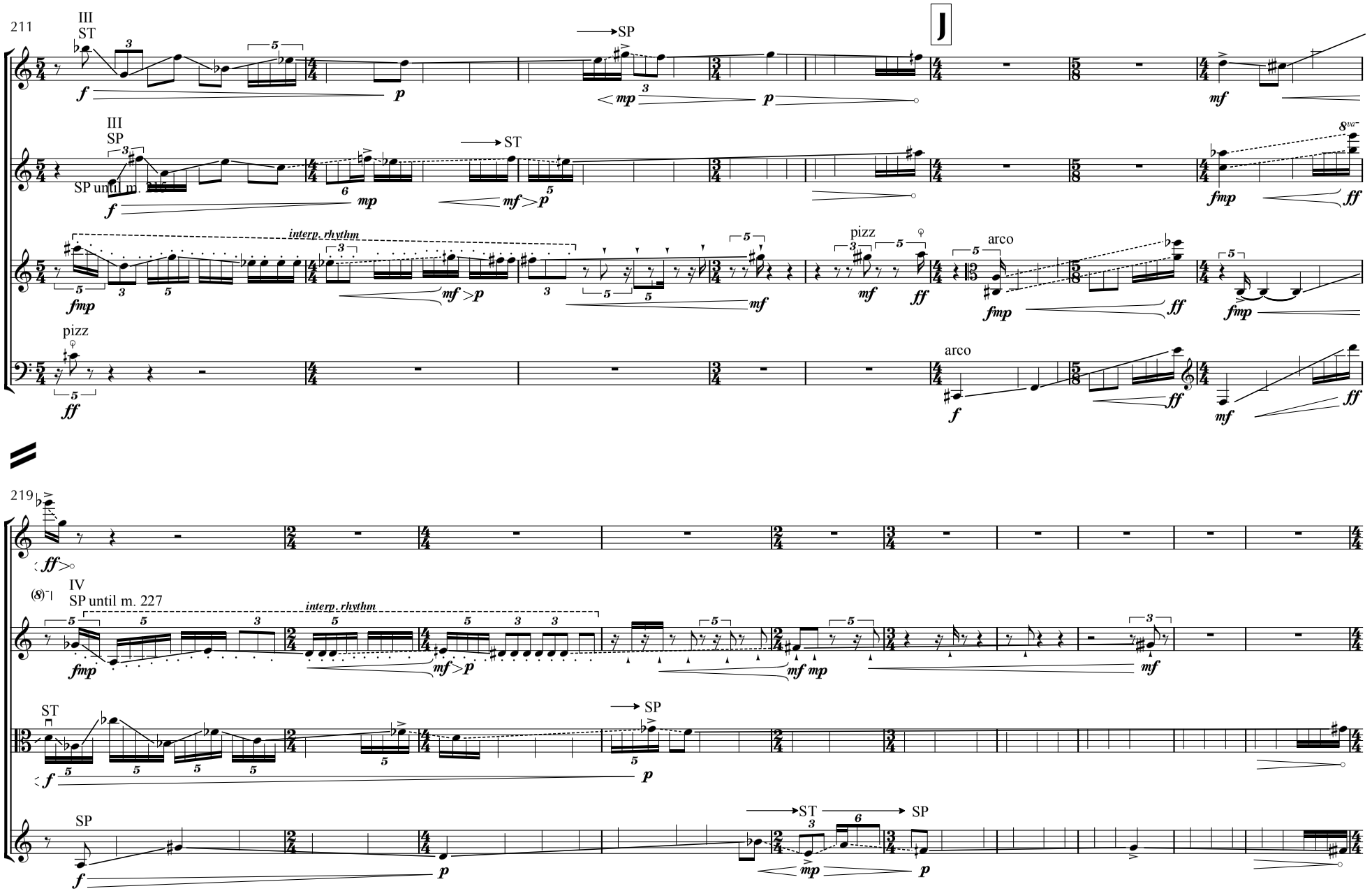
SP

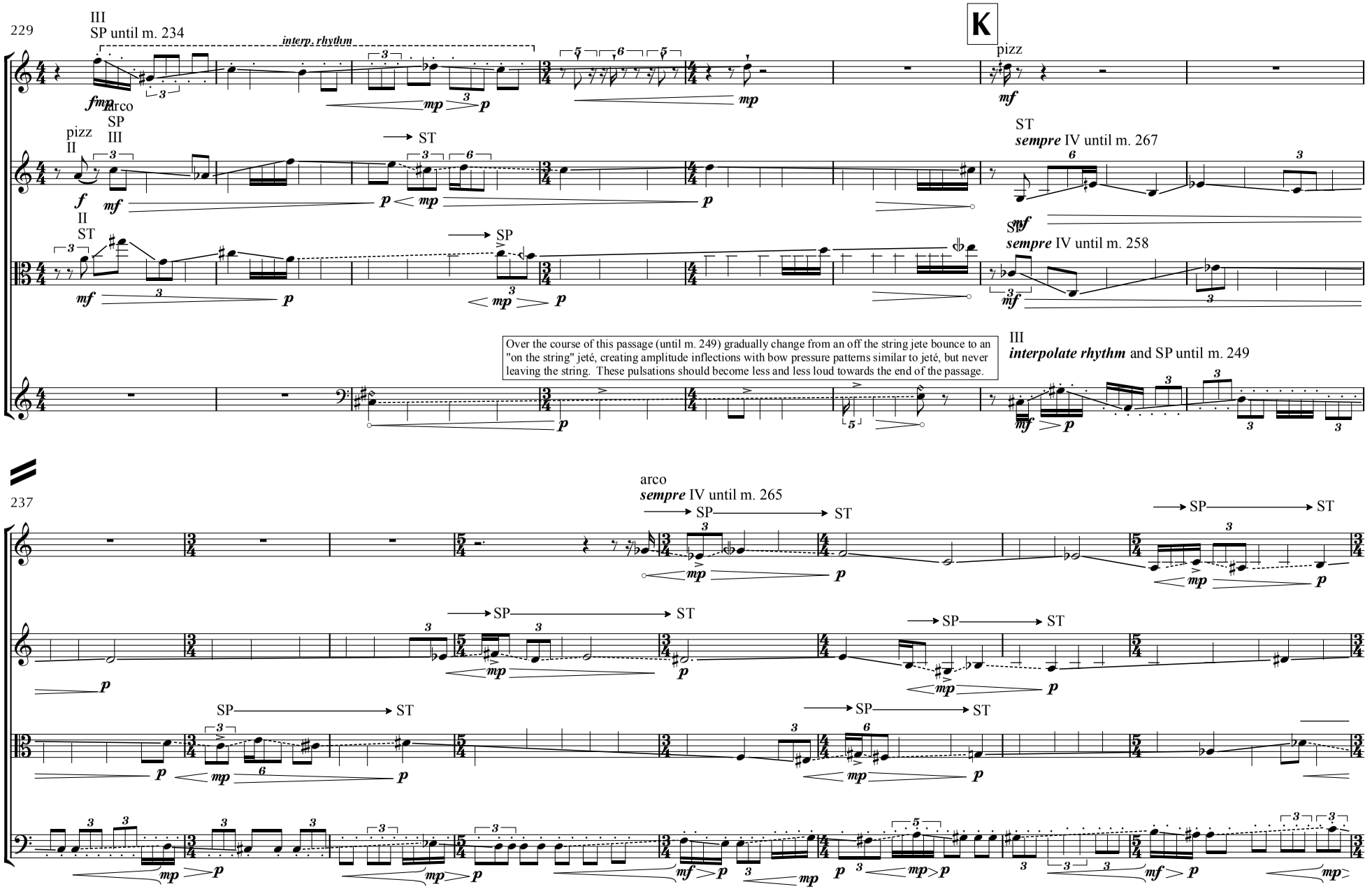
ST

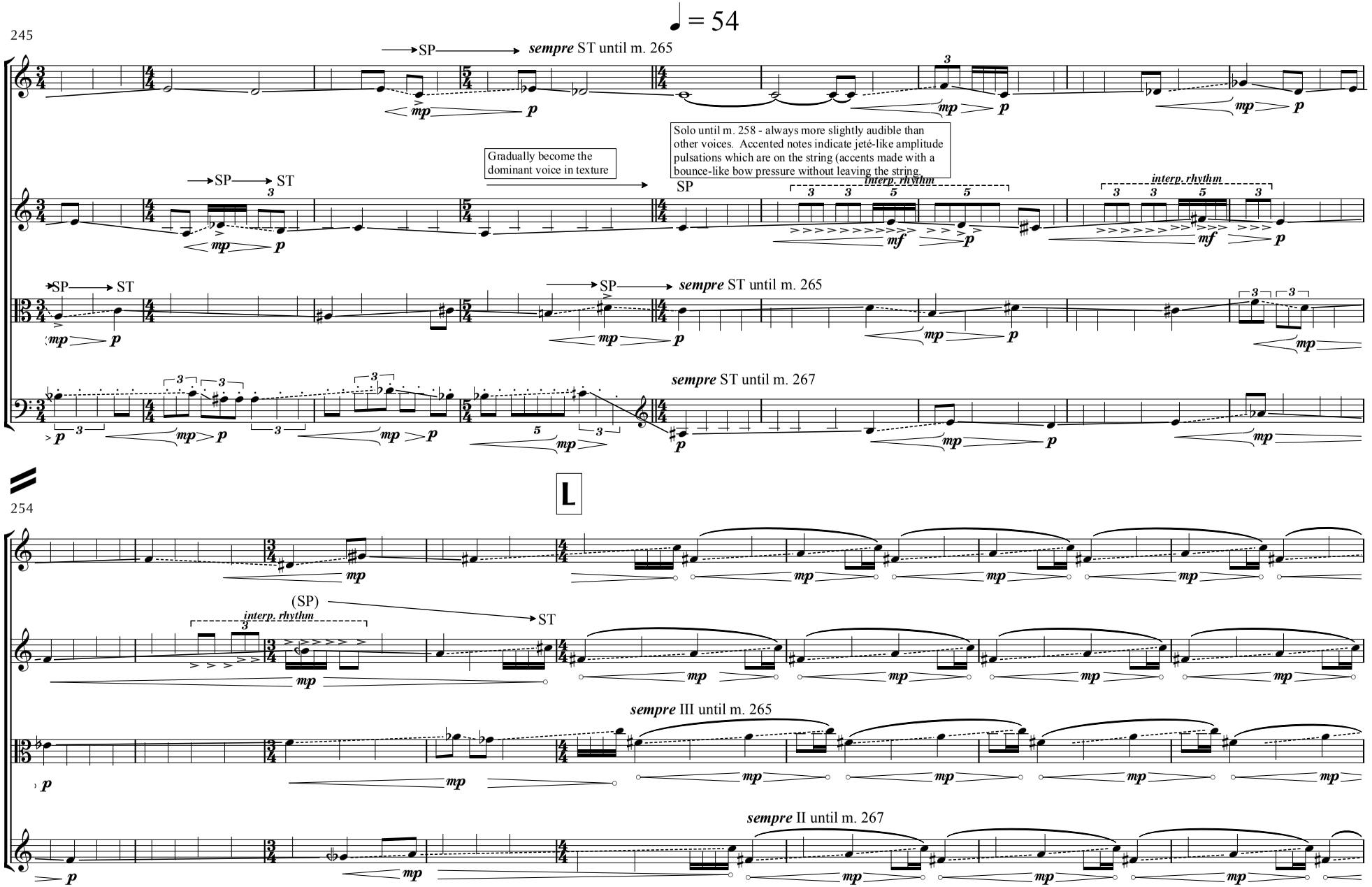
II

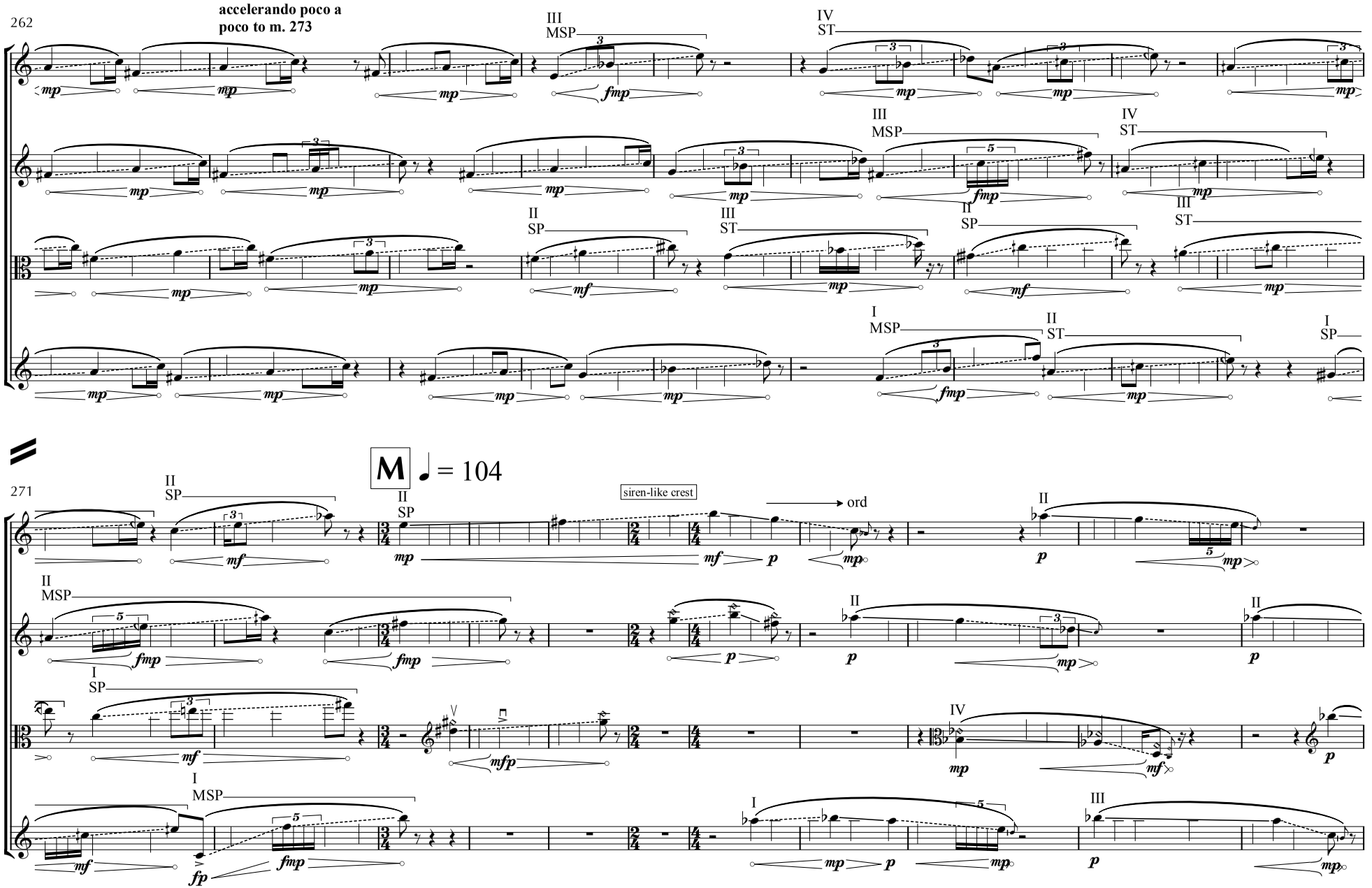
SP until m. 210

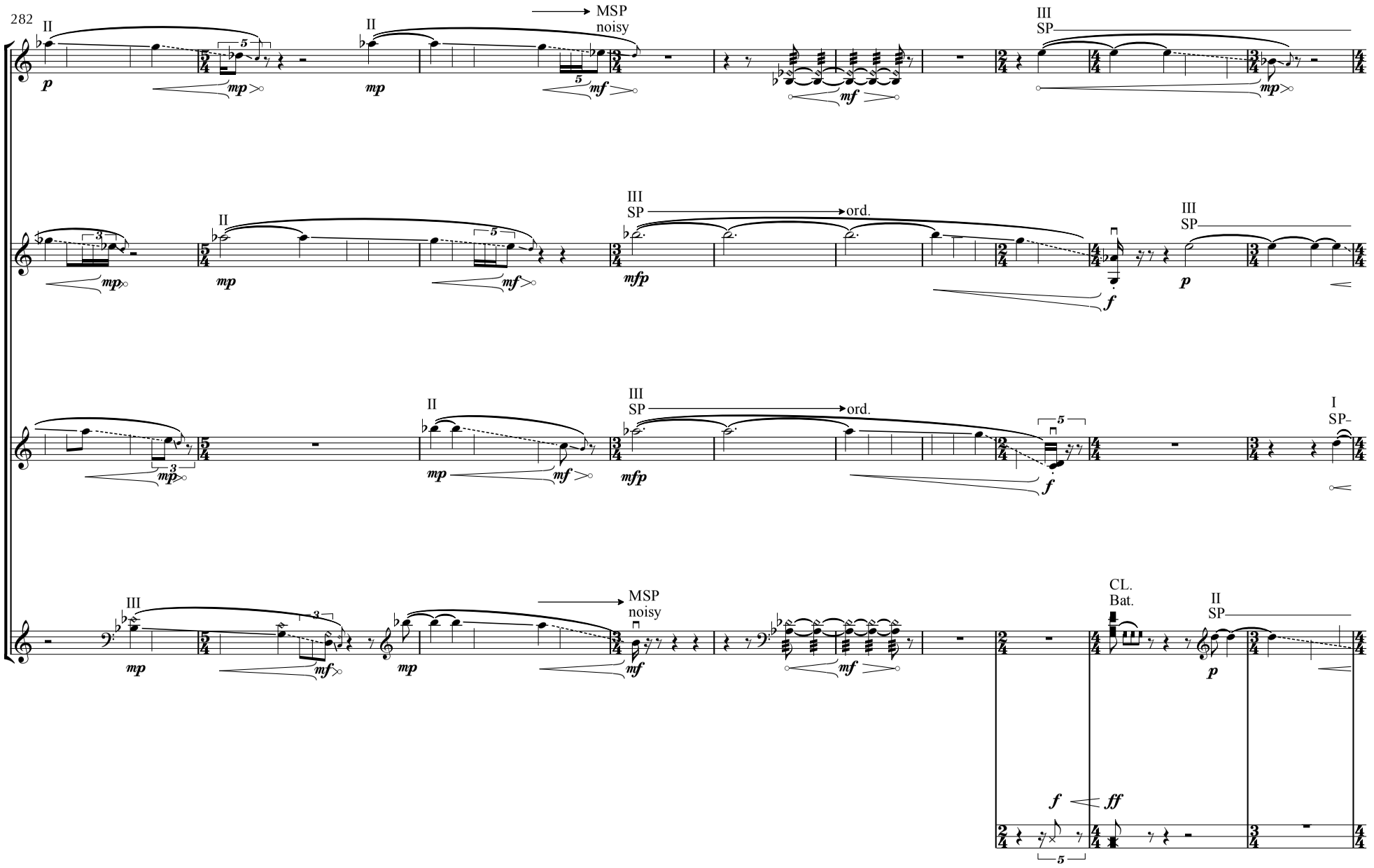
interp. rhythm

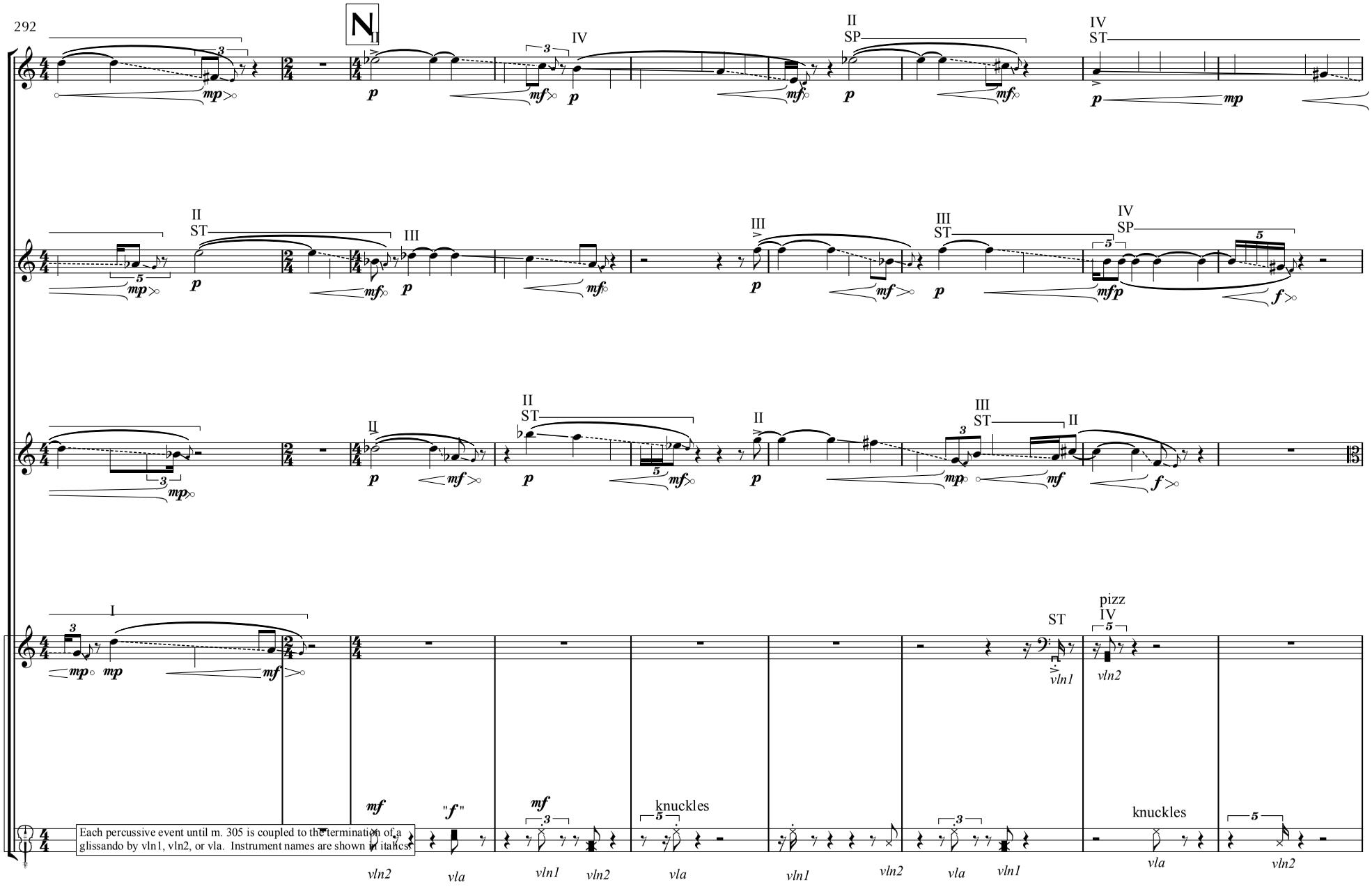

211
III
ST
SP
J
III
SP
SP until m.
ST
8va
interp. rhythm
pizz
arco
219
IV
SP until m. 227
interp. rhythm
ST
SP
SP
ST
SP

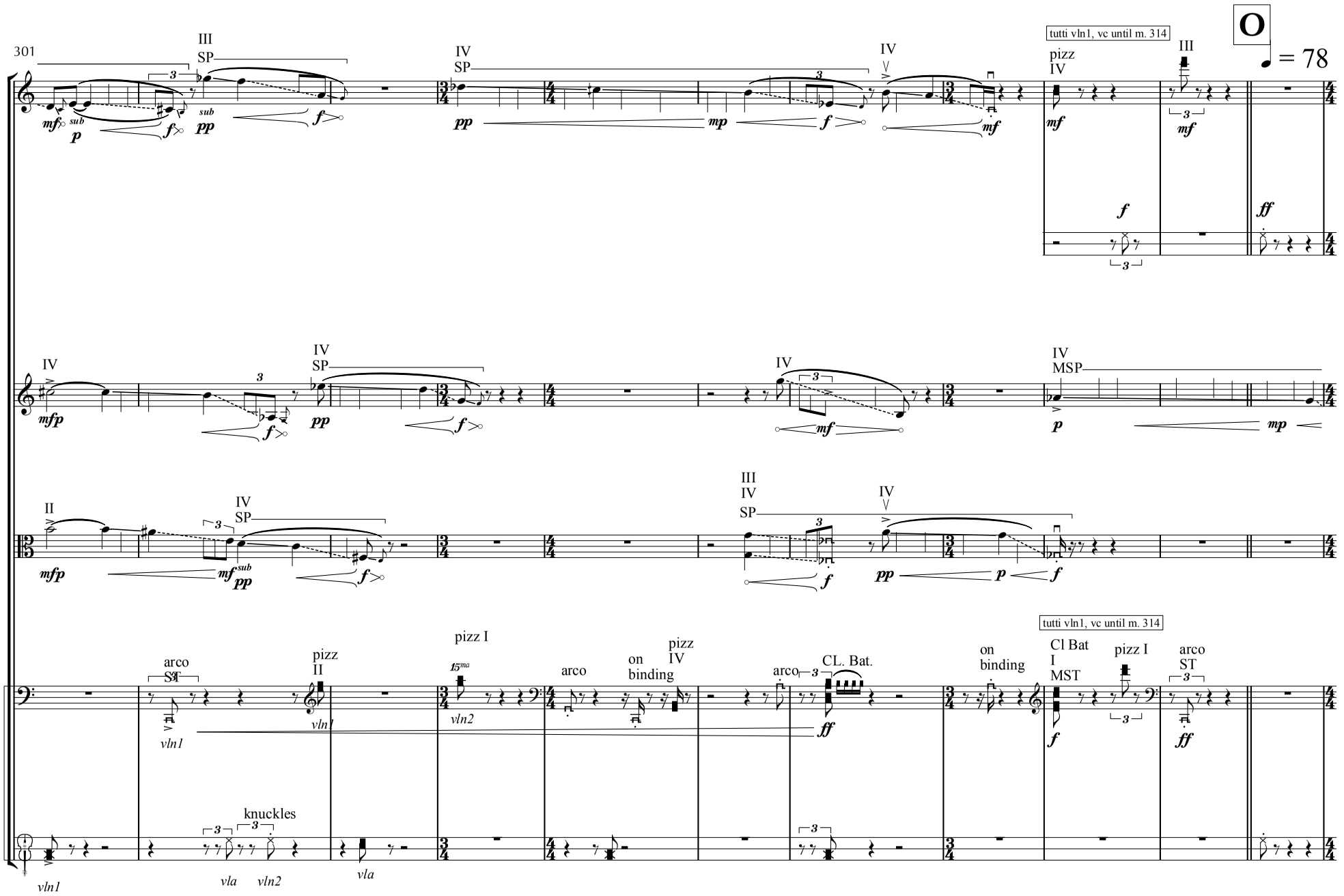

229
III
SP until m. 234
interp. rhythm
fmp
Arco
SP
III
pizz
II
K
pizz
mf
ST
sempre IV until m. 267
II
ST
SP
sempre IV until m. 258
Over the course of this passage (until m. 249) gradually change from an off the string jete bounce to an "on the string" jeté, creating amplitude inflections with bow pressure patterns similar to jeté, but never leaving the string. These pulsations should become less and less loud towards the end of the passage.
III
interpolate rhythm and SP until m. 249
237
arco
sempre IV until m. 265
SP
ST

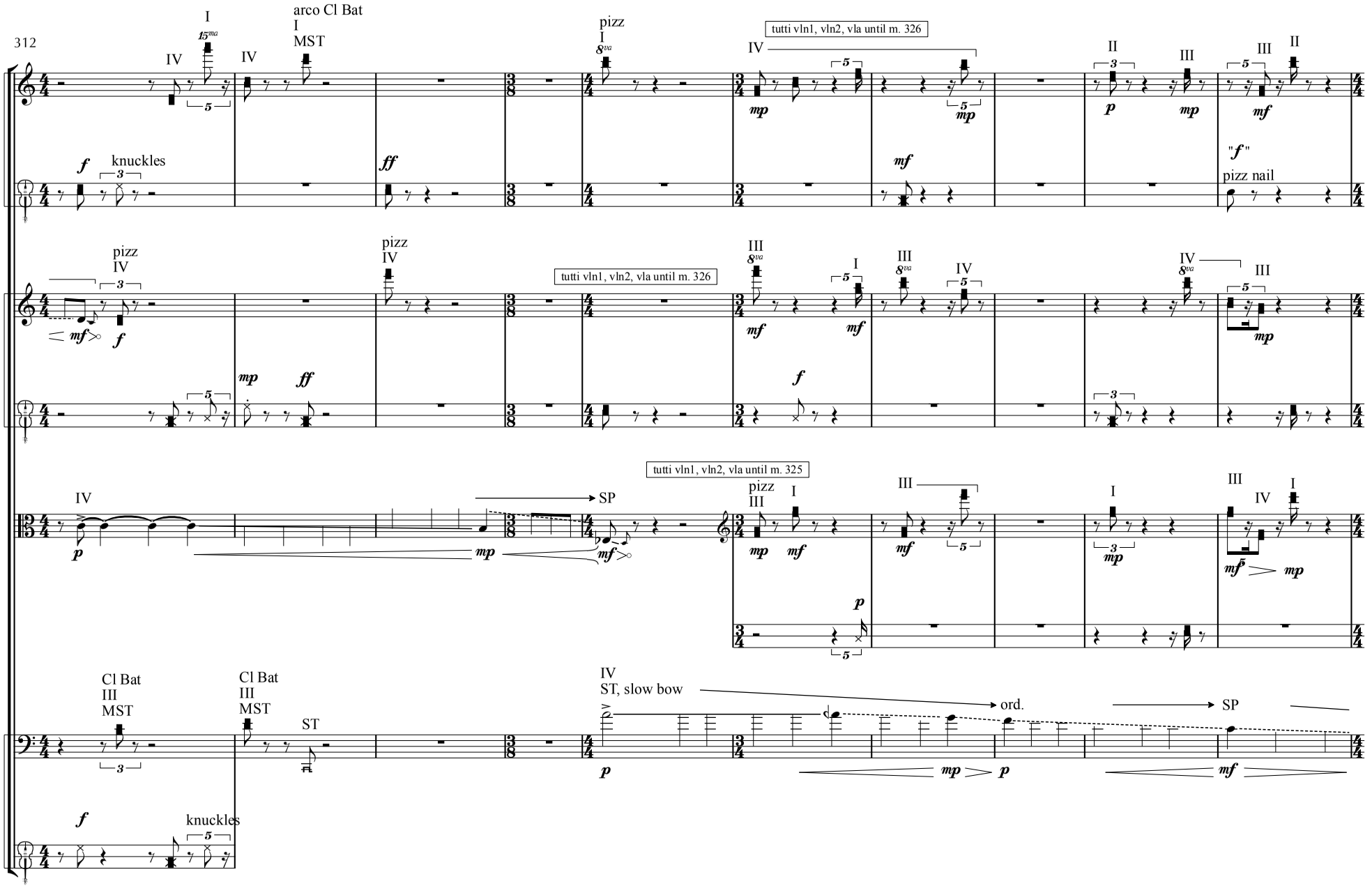

♩ = 54
245
SP
sempre ST until m. 265
Gradually become the dominant voice in texture
Solo until m. 258 - always more slightly audible than other voices. Accented notes indicate jeté-like amplitude pulsations which are on the string (accents made with a bounce-like bow pressure without leaving the string.
interp. rhythm
ST
sempre ST until m. 267
L
254
(SP)
sempre III until m. 265
sempre II until m. 267

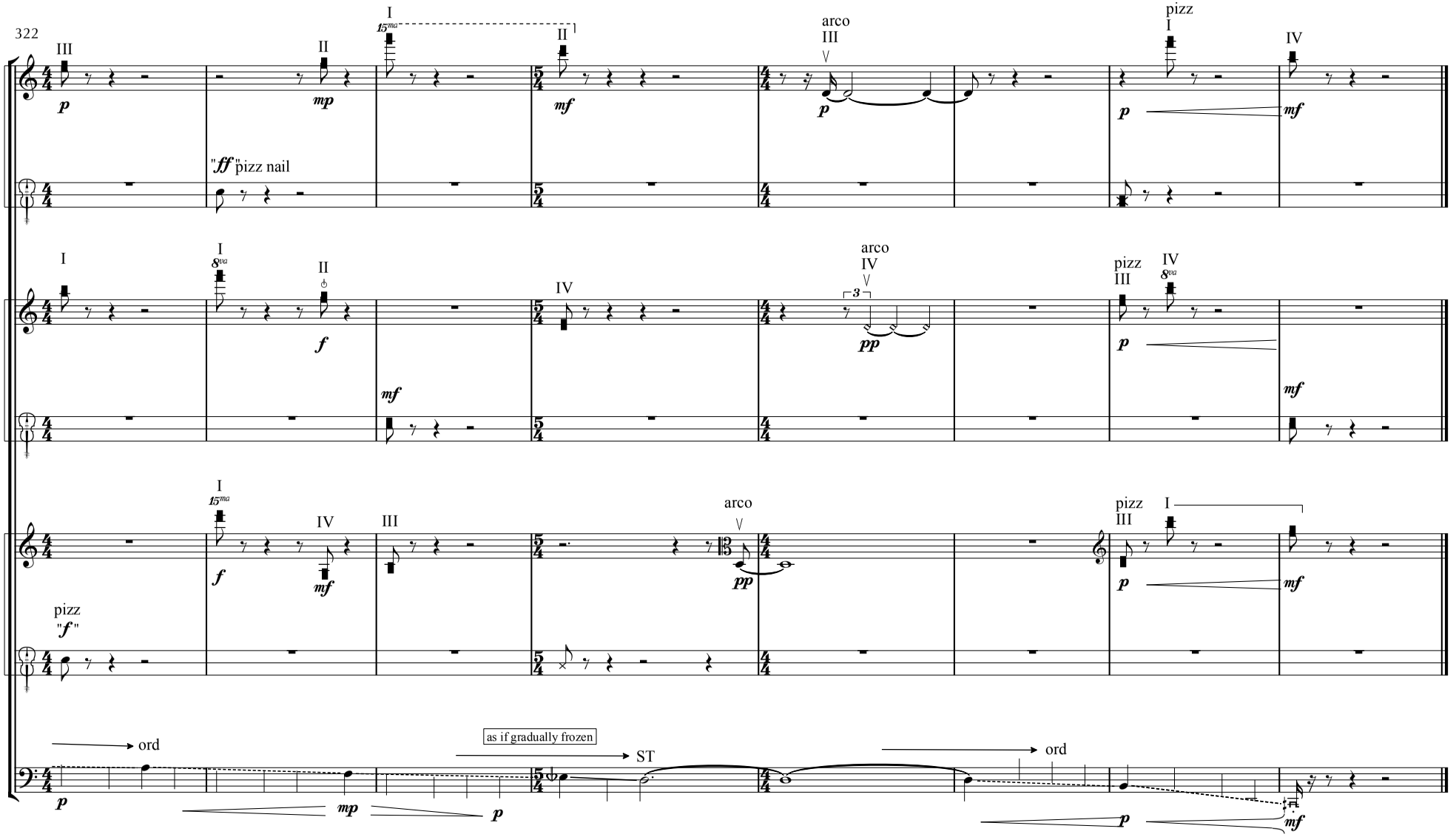

262
accelerando poco a poco to m. 273
271
M
= 104
siren-like crest
ord


282
II
MSP
noisy
III
SP
ord.
I
CL.
Bat.


292
N
II
IV
II
SP
IV
ST
II
ST
III
III
ST
IV
SP
II
ST
II
III
ST
II
I
ST
pizz
IV
Each percussive event until m. 305 is coupled to the termination of a glissando by vln1, vln2, or vla. Instrument names are shown in italics.
knuckles
knuckles
vln2
vla
vln1
vln2
vla
vln1
vln2
vla
vln1
vla
vln2


301
III
SP
IV
SP
IV
tutti vln1, vc until m. 314
pizz
IV
III
O
= 78
IV
IV
SP
IV
IV
MSP
II
IV
SP
III
IV
SP
IV
arco
ST
pizz
II
pizz I
arco
on
binding
pizz
IV
arco
CL. Bat.
on
binding
tutti vln1, vc until m. 314
Cl Bat
I
MST
pizz I
arco
ST
knuckles
vln1
vla
vln2
vla


312
arco Cl Bat
MST
pizz
tutti vln1, vln2, vla until m. 326
knuckles
pizz nail
tutti vln1, vln2, vla until m. 325
SP
Cl Bat
ST
ST, slow bow
ord.



December 19th, 2014
Liverpool England